MICROTRAP +™ VOD RECORDER

The world's most popular, affordable, and high-performance VOD recorder, redefined for the modern blast engineer

MicroTrap +™
VOD RECORDER

MREL®
GROUP OF COMPANIES

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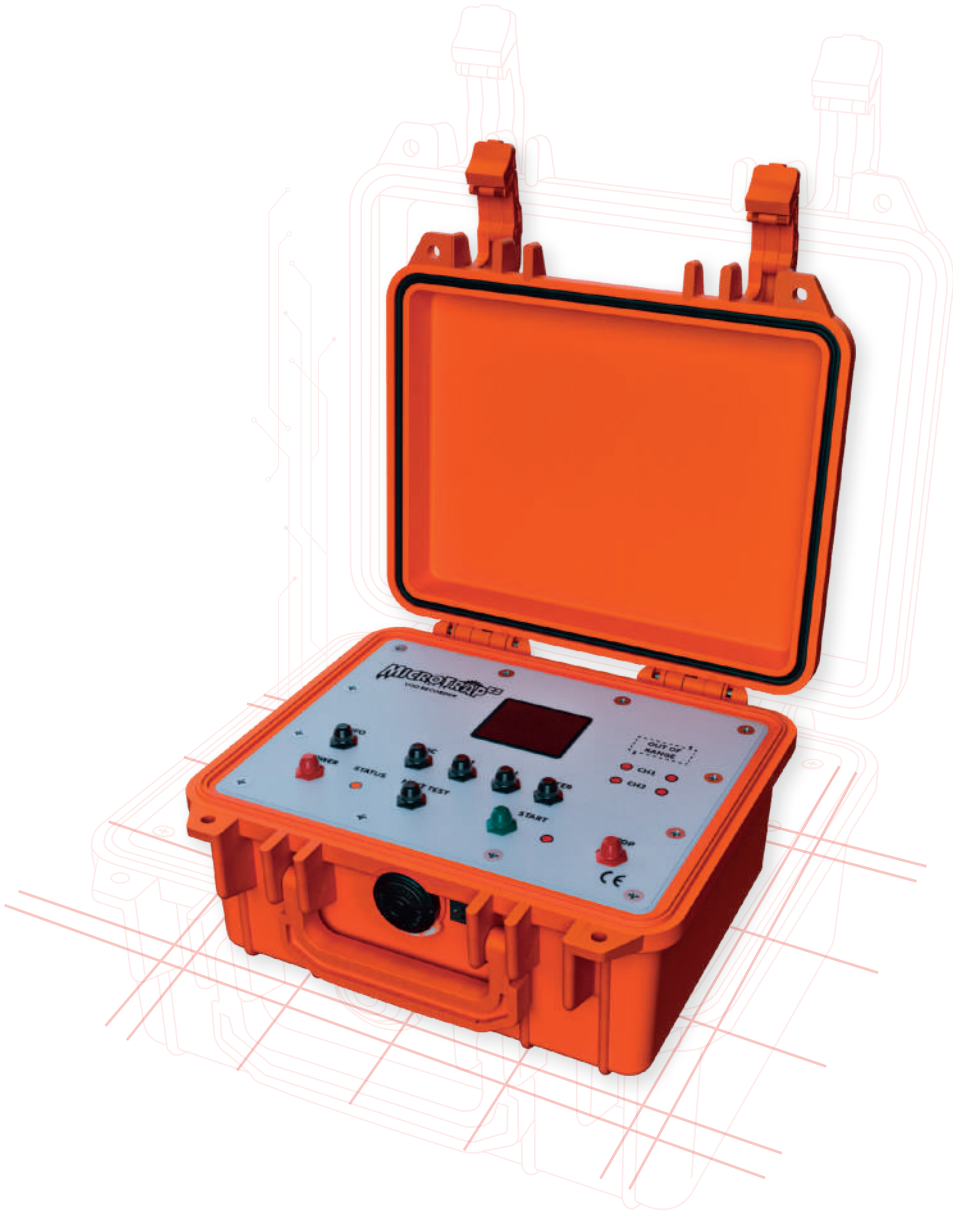
Velocity of Detonation (VOD) is the most critical indicator of an explosive's performance. Without measuring VOD, it is impossible to confirm whether an explosive is meeting its specifications or to ensure consistent quality in its performance.



APPLICATIONS

EXPLOSIVES CONSUMERS

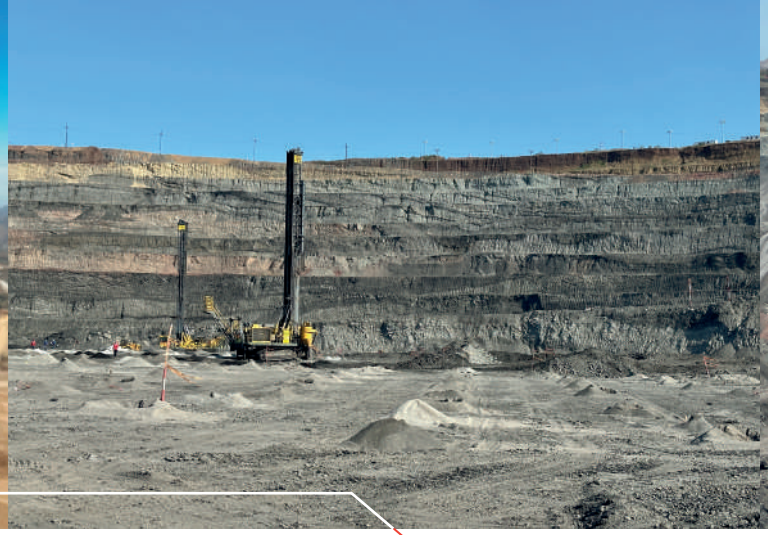
You invest in explosives to deliver the energy your blasts require under specific conditions. The MicroTrap +™ VOD Recorder allows mines and quarries to perform spot checks on explosive performance, comparing actual in-hole VOD results with the manufacturer's specified VOD.

EXPLOSIVES MANUFACTURERS

Your customers rely on consistent, high-quality explosives. At production sites, the MicroTrap +™ VOD Recorder is an essential quality control tool, testing VOD performance across cartridges, boosters, detonating cords, bulk explosives, and military-grade products. At customer blast sites, technicians use the MicroTrap +™ to proactively document and verify the VOD performance of explosives, ensuring reliability and trust in every blast.

WHAT MAKES THE MICROTRAP +™ DIFFERENT?

- **Dual VOD Channels:** The VOD recorder with two independent channels, allowing simultaneous measurement in separate blastholes or explosive samples. Perfect for complex ground conditions.
- **High Speed Precision:** One of MREL's fastest sample rates available, capturing even the shortest and fastest explosive events with accuracy.
- **Expanded Memory:** Record more blastholes and retain more data without compromise.
- **Flexible Control:** Fully programmable through the onboard interface or PC software, adapting to your workflow.
- **Trigger Mode:** Trigger internally on the VOD signal from the blast or trigger externally from trigger wire.
- **Trusted Worldwide:** Designed and supported by MREL. MREL's proven reliability in leading laboratories and field operations for over 50 years.
- **Competitive Value:** With a lower price, the MicroTrap +™ VOD Recorder delivers premium performance at a significantly lower cost than the industry standard.
- **Comprehensive Training:** On-site or virtual training available anytime to ensure your team is confident from day one.
- **Safety First:** Designed with current limitation (≤50 mA) for safe field use.
- **Lifetime Value:** Backed by a renewable one-year warranty, reflecting our confidence in durability and long-term performance.



TEST EXPLOSIVES IN ONE OR MORE BLASTHOLES

To evaluate explosive performance, insert a continuous length of VOD PROBECABLE into each blasthole to be tested. You may choose to measure velocity of detonation (VOD) using either one or two channels, depending on your test requirements. The MicroTrap +™ VOD Recorder supports recording up to 900 meters (3,000 feet) of VOD PROBECABLE per channel, per blast with multiple holes.

Proceed to load the blastholes with explosives following your standard operational procedures. Once loading is complete, connect the coaxial cable from the VOD PROBECABLE to the MicroTrap +™ VOD Recorder. Power on the MicroTrap +™ VOD Recorder. Press the NEXT TEST button to verify circuit integrity, then press START to initiate recording. After confirming proper operation, vacate the blast area and initiate the blast at your discretion. The MicroTrap +™ VOD Recorder will automatically capture detonation velocities and inter-hole delay times, no further operator input is required during the blast.

Post-blast, or at a later time in the office, download the recorded VOD data to a PC. Utilize the software interface to visualize the detonation graph, with interactive features allowing you to zoom, inspect specific segments, and calculate VOD values and delay times at any point along the explosive columns.

TEST ONE SAMPLE OF EXPLOSIVES

The procedure for testing a single or two explosives sample closely follows that of a standard blasthole test, with the primary difference being the use of a 0.9 m (3 ft.) VOD PROBEROD. The PROBEROD should be either inserted directly into the explosive sample or securely taped to its exterior, depending on the test setup and explosive type. Custom VOD PROBEROD lengths and material types are available upon request.

All cable connections, MicroTrap +™ VOD Recorder operations, data download, and analysis procedures are identical to those used in a blasthole tests. The system also supports simultaneous testing of two explosive samples, using the same dual-channel capability as with multiple blasthole configurations.

SOLVING INDUSTRY CHALLENGES

Mining operators, quarries, and explosive manufacturers demand accuracy and reliability where single-channel recorders fall short. The MicroTrap +™ VOD Recorder offers:

- Dual-channel flexibility when blastholes are distant or staggered.
- High sampling rate and more memory for critical measurements.
- A simple, user-friendly interface for fast setup and review.
- Seamless support and training for confident operation.

WHO IS IT FOR?

The MicroTrap +™ VOD Recorder is designed for professionals who need:

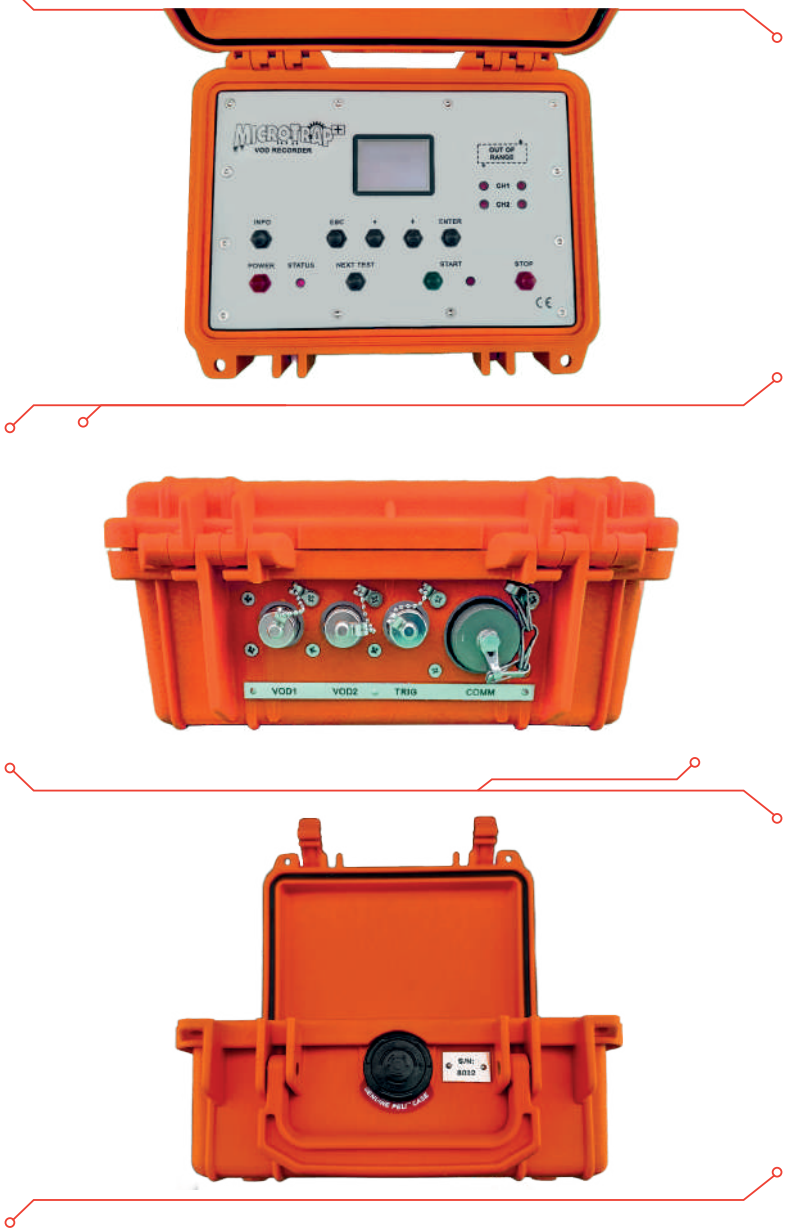
- Independent & simultaneous monitoring of multiple blastholes or explosive samples.
- Efficient test configurations without sacrificing measurement quality.
- Reliable, high resolution VOD data under demanding field conditions. Ultra-portable and rugged.

VALUE YOU CAN TRUST

- **Flexibility:** Dual-channel measurement in a single system.
- **Accuracy:** High speed sampling and large memory capacity.
- **Ease of Use:** Simple setup via the unit or PC software.
- **Support:** Free training anytime, anywhere.
- **Proven Legacy:** 25+ years of recorders still in service worldwide.

KEY FEATURES OVERVIEW

- Two VOD channels (2 MHz sample rate, 500 ns per sample)
- 14-bit resolution
- Rugged, IP-rated enclosure. IP68 certified.
- USB-C interface. No driver installation needed, uses built-in Windows drivers.
- Long-life rechargeable battery
- Flash memory
- LED status indicators
- Trigger mode (internal & external)
- Multi-Trig mode allows it to keep monitoring and trigger again after a false trigger.
- Store Date/Time of the trigger event



SCOPE OF DELIVERY

MicroTrap +™ VOD Recorder

Padded Carry Case

Charger (region-specific)

USB-C cable

External Trigger Adapter

Operations Manual

1-Year Warranty Certificate

WARRANTY, TRAINING & SUPPORT

WARRANTY:

Renewable annual warranty backed by 25+ years of proven performance.

TRAINING:

Expert-led technical support available anytime.

SUPPORT:

Global technical support available 24/7.

TECHNICAL DATA SHEET

Number of Channels: 2 VOD channels.
Resolution: 14 bits, 1 part in 16,384.
Recording Rates: Selectable from 500 kHz to 2 MHz.
Rates: 500 kHz, 1 MHz, 2 MHz
Non-Volatile Memory: Standard = 50 GB.
Recording Time (@ 2 MHz Recording Rate): Standard = 5 seconds. Adjustable from 128 ms to 6.4 seconds for file size control.
Trigger Mode: Trigger internally on the signal from the event (70 to 95%) or trigger externally from a trigger wire.
Multiple Event Storage: 32 tests can be stored in the internal memory.
Power: AC mains or internal rechargeable NiMH battery which provides 12 hours of active operation on a full charge. Charger provided.
Size and Weight: 21 x 17 x 9 cm (8.3 x 6.7 x 3.5 in.) 2 kg (4.4 lbs.).
Environmental: Fully operational at -20 to +60 °C (-20 to +140 °F). Snow, rain, dust and sand proof. Drop proof from a height of at least 1 m (3 ft.). IP68.
PC Connection: At any time after recording, the operator can connect the MicroTrap +™ VOD Recorder to a computer's USB port.
Software: The MicroTrap +™ Advanced Analytical Software operates under Windows 10™ and 11™.
System Components Provided: MicroTrap +™ VOD Recorder, 120 or 230 VAC Battery Charger, USB-C Cable, padded carry case, colour Operations Manual, MicroTrap +™ VOD Recorder Advanced Analytical Software for Windows 10™ and later.
VOD Excitation and Safety: The MicroTrap +™ VOD Recorder is physically unable to output more than 50 mA of current to a VOD PROBEROD or VOD PROBECABLE.
Warranty: MREL's 1 years Comprehensive Parts and Labour Warranty.
Technical Support: MREL's Unlimited Technical Support Program by customer portal, email, and telephone.

ACCESSORIES

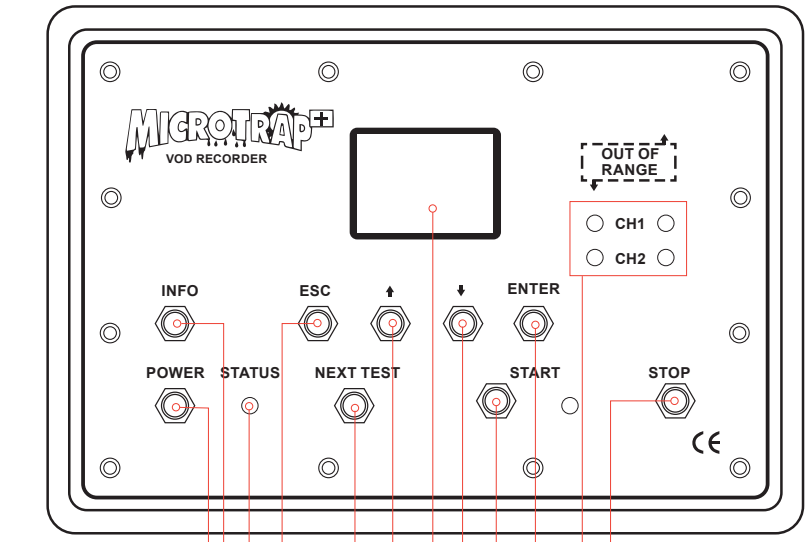
The MicroTrap +™ VOD Recorder is designed to work seamlessly with a range of MREL VOD sensors and accessories:

VOD PROBEROD: Calibrated resistance probes for accurate VOD measurements in explosive samples.

VOD PROBECABLE: Calibrated resistance cables providing reliable VOD measurement in blastholes.

Coaxial Cable Reels: Available in various lengths to transmit signals from the VOD Sensors to the recorder with precision and reliability.

MAIN CONTROL PANEL



ON/OFF Switch

INFO Button

STATUS Indicator

ESCAPE Button

NEXT TEST Button

UP Button

Screen

DOWN Button

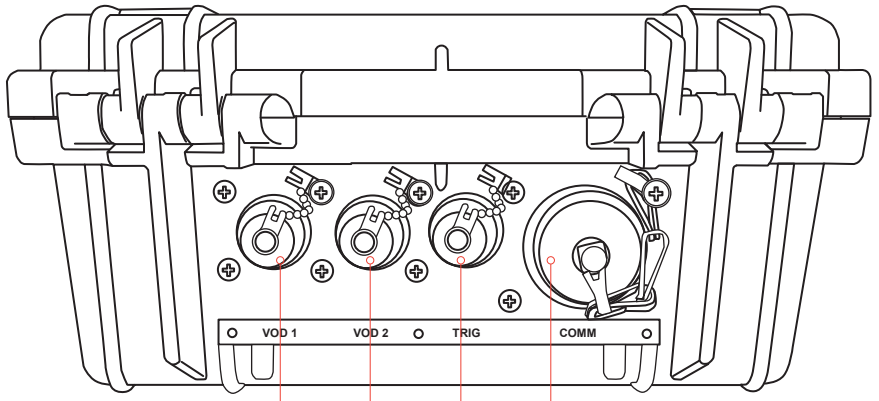
START Button and Indicator

ENTER Button

OUT OF RANGE Lights

STOP Button

BACK PANEL



VOD1 Connector

VOD2 Connector

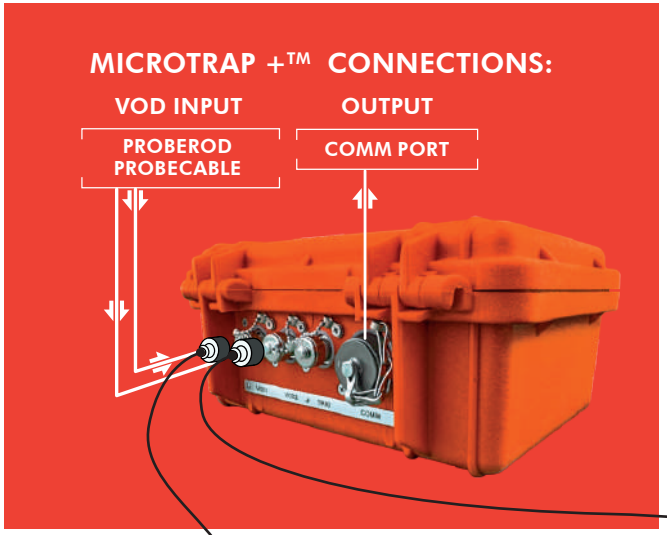
COMM Port

EXT TRIG Connector

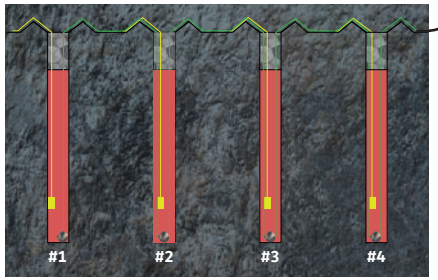
SUMMARY TABLE

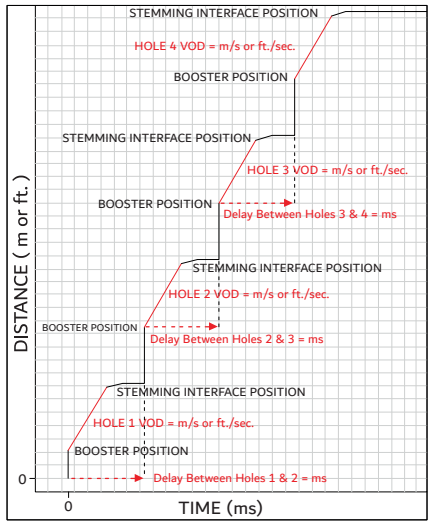
Category	MICROTRAP +™ Advantages
Features	Dual VOD channels, onboard & PC programmability
Performance	High sample rate, expanded memory
Usability	Intuitive interface, quick setup
Reliability	Proven technology trusted worldwide
Training	Expert technical support, available anytime
Pricing	Premium technology at lower price
Warranty	Renewable coverage, 25+ years of service legacy

REDESIGN



VOD TEST ON FOUR BLASTHOLES





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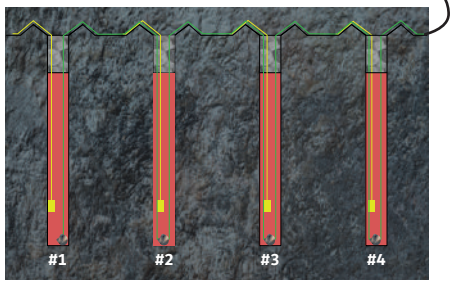

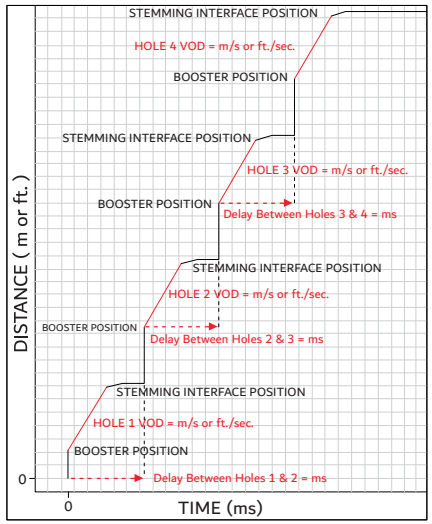

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